

## PROJECT DESCRIPTION

## I. GENERAL

This portion of the project involves the reconstruction of existing Traffic Control Signals at the intersection of US 1 and 42nd Pl / Crittenden St in Prince George's County. US 1 is assumed to run a north-south direction. The signal shall be interconnected to Farragut Street to the north and to 41st Pl / Charles Armentrout Way to the south.

## II. INTERSECTION OPERATION

- The intersection is to operate in a NEMA four-phase, semi-actuated mode, with the US 1 approaches running concurrently. A pedestrian phase with pushbutton actuation shall be provided across the north leg of US 1. The pedestrian phases across 42nd Place and Crittenden Street shall be on recall. The 42nd Place and Crittenden Street approaches shall run as a side street split phase. Detection shall be provided via video detection.
- A full-traffic-actuated, eight-phase controller with all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

## III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- All controller cabinet wiring will be performed by the S.H.A. Signal Shop. Contact Mr. Ed Rodenhizer at (410) 787-7650 seventy-two hours in advance of intended work.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

## EQUIPMENT LIST

## A. EQUIPMENT TO BE SUPPLIED BY S.H.A.

| ITEM NO. | DESCRIPTION  | QUANTITY |
|----------|--|----------|
| 9042     | Controller ASC II with telemetry   | 1 EA     |
| 9044     | Controller cabinet, size "6"   | 1 EA     |
| 9086     | Video detection interface equipment: 1-4 cameras (To be installed by signal shop). | 1 EA     |
| 9571     | Sheet aluminum signs to consist of: (mast arm or pole mount)                       | 52 SF    |
|          | R10-11b "NO TURN ON RED" sign, (24"x24").  | 1 EA     |
|          | D3-2 "(arrow) 42nd Place (arrow) Crittenden St" sign, (variable x 32").            | 1 EA     |
|          | D3-2 "Crittenden St (arrow) 42nd Place (arrow)" sign, (variable x 32").            | 1 EA     |

## B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

| ITEM NO. | DESCRIPTION  | QUANTITY  |
|----------|--|-----------|
| 2001     | Class 2 Excavation.  | 8 C.Y.    |
| 2002     | Test Pit Excavation  | 9 C.Y.    |
| 5005     | 12" white heat applied permanent preformed thermoplastic pavement marking. | 420 L.F.  |
| 5006     | 24" white heat applied permanent preformed thermoplastic pavement marking. | 145 L.F.  |
| 6001     | Furnish and install depressed curb and gutter.                             | 25 L.F.   |
| 6002     | Standard type A combination curb and gutter 12" gutter pan 8" depth.       | 100 L.F.  |
| 6004     | 4" concrete sidewalk.  | 1235 S.F. |
| 8001     | Furnish and install concrete for signal foundation.                        | 14 C.Y.   |
| 8002     | Furnish and install 12" pedestrian signal head section                     | 12 EA     |

## EQUIPMENT LIST (CONT.)

## B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

| ITEM NO. | DESCRIPTION   | QUANTITY  |
|----------|---|-----------|
| 8007     | Pre-manufactured camera to controller (100' length) cable   | 1 EA      |
| 8009     | Pre-manufactured camera to controller (300' length) cable   | 1 EA      |
| 8018     | Furnish and install breakaway pedestal pole (10').  | 5 EA      |
| 8019     | Remove and dispose of existing material and equipment per assignment.                                 | 1 EA      |
| 8027     | Detectable warning system (truncated domes).  | 40 SF     |
| 8031     | Furnish and install No. 6 AWG stranded bare copper ground wire.                                       | 1400 L.F. |
| 8034     | Furnish and install 3" electrical conduit - galvanized riser.   | 70 L.F.   |
| 8035     | Furnish and install 3" weatherhead.   | 2 EA      |
| 8038     | Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - bored.                          | 190 L.F.  |
| 8039     | Furnish and install 2" schedule 80 rigid polyvinyl chloride - trenched.                               | 20 L.F.   |
| 8040     | Furnish and install 3" schedule 80 rigid polyvinyl chloride - trenched.                               | 395 L.F.  |
| 8041     | Furnish and install 4" schedule 80 rigid polyvinyl chloride - trenched.                               | 165 L.F.  |
| 8046     | Metered service pedestal.   | 1 EA      |
| 8048     | Furnish and install electrical cable 1-conductor No. 4 AWG THHN/THWN.                                 | 30 L.F.   |
| 8054     | Furnish and install electrical handhole.  | 10 EA     |
| 8057     | Install overhead sign.  | 52 S.F.   |
| 8058     | Furnish and install video detector camera.  | 2 EA      |
| 8064     | Furnish and install 27' (cut to 21') mast arm pole and 50' mast arm.                                  | 1 EA      |
| 8065     | Furnish and install 27' (cut to 21') mast arm pole and 60' mast arm.                                  | 1 EA      |
| 8075     | Furnish and install ground rod - 3/4" x 10'.  | 9 EA      |
| 8077     | Furnish and install 12" vehicular traffic signal head section   | 24 EA     |
| 8080     | Cut, clean, galvanize and cap traffic signal structure.   | 2 EA      |
| 8083     | Furnish and install electrical cable - 2 conductor (No. 14 AWG).                                      | 495 L.F.  |
| 8085     | Furnish and install electrical cable - 5 conductor (No. 14 AWG).                                      | 1630 L.F. |
| 8086     | Furnish and install electrical cable - 7 conductor (No. 14 AWG).                                      | 750 L.F.  |
| 8090     | Pedestrian pushbutton and R10-4(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS RHODE ISLAND AVE".) | 2 EA      |
| 8096     | Install controller and cabinet base mount.  | 1 EA      |
| Neg.     | Furnish and install electrical cable - 1 conductor (No. 250 KCMIL)                                    | 195 LF    |

## C. EQUIPMENT TO BE REMOVED

SHA Forces shall remove the controller and all auxiliary equipment from the controller cabinet. The cabinet and all other removed signal materials are to become property of the contractor.

The contact persons for District #3 (Prince George's County) are as follows:

Mr. Majid Shakib  
Assistant District Engineer - Traffic  
Phone: (301) 513-7358

Mr. Wayne Mowdy  
Assistant District Engineer - Maintenance  
Phone: (301) 513-7304

Mr. Augie Rebish  
Assistant District Engineer - Utility  
Phone: (301) 513-7350

Mr. Richard L. Daff, Sr.  
Chief, Traffic Operations Division  
Phone: (410) 787-7630

Mr. Ed Rodenhizer  
Signal Shop  
410-787-7652

Mr. Sonny Bailey  
Signal Shop  
410-787-7670

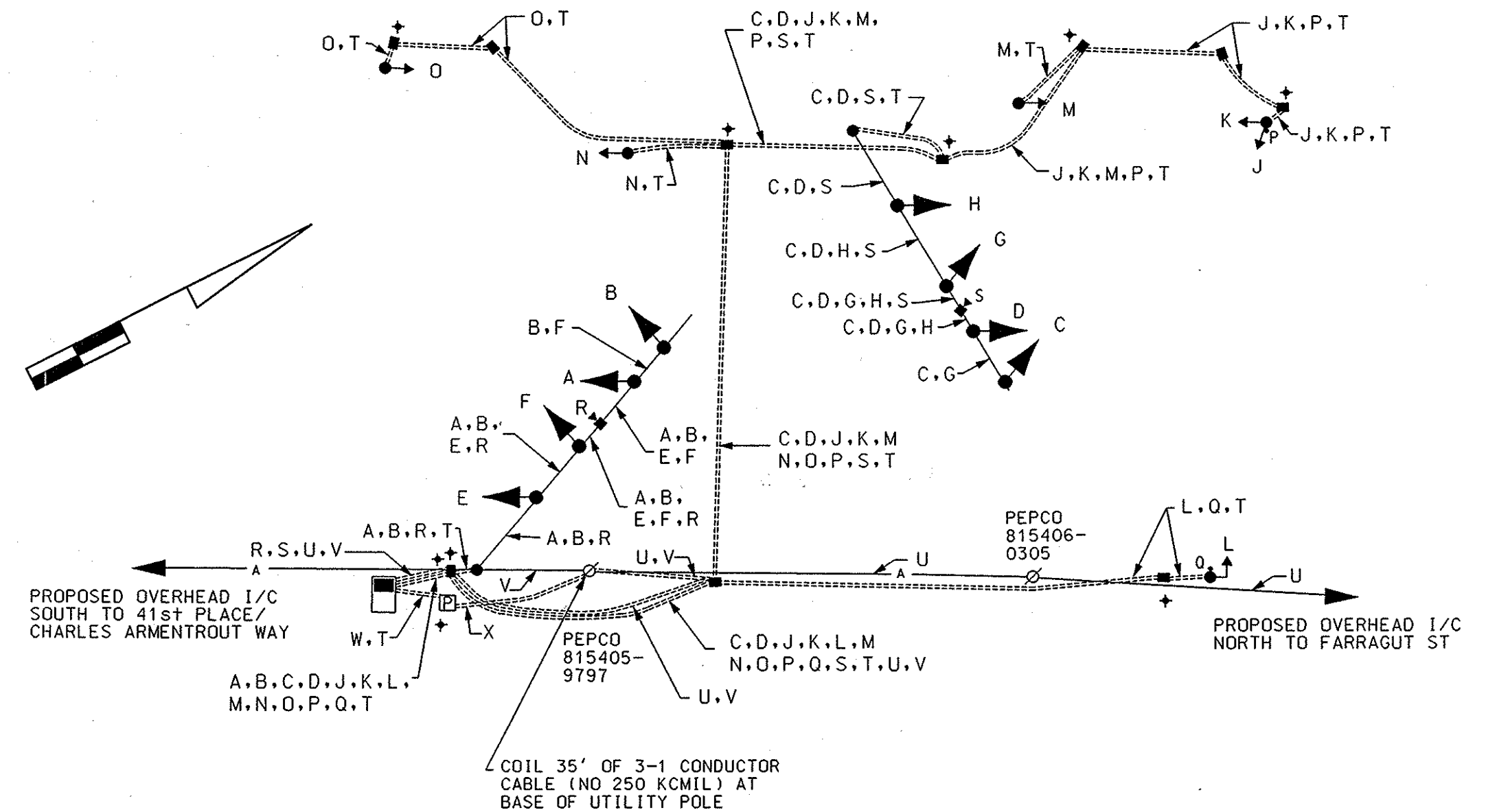
The power company representative is:

Mr. Richard Chilcoat  
PEPCO  
8300 Old Marlboro Pike  
Upper Marlboro, MD 20772

## PHASE CHART

|                    | 1                 | 2                 | 3                 | 4                 | 5                 | 6                 | 7                 | 8                 | 9                 | 10                | 11                | 12                | 13                | 14                |
|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                    | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) | (R)<br>(Y)<br>(G) |
| PHASE 2 & 6        | G                 | G                 | G                 | G                 | R                 | R                 | R                 | R                 | WK                | WK                | WK                | WK                | DW                | DW                |
| PED CLEAR          | G                 | G                 | G                 | G                 | R                 | R                 | R                 | R                 | FL/DW             | FL/DW             | FL/DW             | FL/DW             | DW                | DW                |
| 2 & 6 CHANGE       | Y                 | Y                 | Y                 | Y                 | R                 | R                 | R                 | R                 | DW                | DW                | DW                | DW                | DW                | DW                |
| PHASE 3            | R                 | R                 | R                 | R                 | R                 | R                 | G                 | G                 | DW                | DW                | DW                | DW                | DW                | DW                |
| 3 CHANGE           | R                 | R                 | R                 | R                 | R                 | R                 | Y                 | Y                 | DW                | DW                | DW                | DW                | DW                | DW                |
| PHASE 4            | R                 | R                 | R                 | R                 | G                 | G                 | R                 | R                 | DW                | DW                | DW                | DW                | DW                | DW                |
| 4 CHANGE           | R                 | R                 | R                 | R                 | Y                 | Y                 | R                 | R                 | DW                | DW                | DW                | DW                | DW                | DW                |
| PHASE 4 ALT        | R                 | R                 | R                 | R                 | G                 | G                 | R                 | R                 | DW                | DW                | DW                | DW                | WK                | WK                |
| PED CLEAR          | R                 | R                 | R                 | R                 | G                 | G                 | R                 | R                 | DW                | DW                | DW                | DW                | FL/DW             | FL/DW             |
| 4 CHANGE ALT       | R                 | R                 | R                 | R                 | Y                 | Y                 | R                 | R                 | DW                | DW                | DW                | DW                | DW                | DW                |
| FLASHING OPERATION | FL/Y              | FL/Y              | FL/Y              | FL/Y              | FL/R              | FL/R              | FL/R              | FL/R              | DARK              | DARK              | DARK              | DARK              | DARK              | DARK              |

## WIRING DIAGRAM



| WIRING KEY                                  |  |
|---|--|
| A B C D                                     | 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)             |
| E F G H I J K L M N O P Q R S T U V W X Y Z | 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)             |
| P Q   | 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)             |
| R   | PRE-MANUFACTURED TO CONTROLLER CABLE (100')              |
| S   | PRE-MANUFACTURED TO CONTROLLER CABLE (300')              |
| T   | STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)          |
| U   | 12-PAIR VOICE GRADE INTERCONNECT CABLE (SELF SUPPORTING) |
| W   | 2-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)            |
| X   | 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 250 KCMIL)           |
| Y   | GROUND ROD   |



|  |                    |                         |                   |
|--|--------------------|-------------------------|-------------------|
| MARYLAND DOT - STATE HIGHWAY ADMINISTRATION<br>Office of Traffic & Safety<br>TRAFFIC ENGINEERING DESIGN DIVISION |                    |                         |                   |
| US 1 AND 42ND PL & CRITTENDEN ST   |                    |                         |                   |
| DRAWN BY: RC   | F.A.P. NO. 11310   | TS NO. 11310            | SHEET NO. 2 OF 2  |
| CHECKED BY: J.E.   | U.A. NO. AT5665185 | COUNTY: PRINCE GEORGE'S | T.I.M.S. NO. 6633 |
| SCALE: NONE  | DATE: 2/15/05      | LOG MILE: 16000101.43   |                   |